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| 10/761,041 | 01/20/2004 | Joe William Heathcott | CDI 30 | 1194 |
| 27297 | 7590 | 10/30/2007 | EXAMINER | |
| DAVID M. O'BRIAN 5007 HARTWELL DR. HOUSTON, TX 77084 | | | PICKARD, ALISON K | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|-------------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/761,041 | HEATHCOTT ET AL. |
| | Examiner Alison K. Pickard | Art Unit 3673 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 40-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 40-49 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

1. The changes to the specification filed 8-15-07 have not been entered because they do not conform to 37 CFR 1.125(b) and (c) because: it raises questions of new matter. Majority of page 3, for example, is considered new matter. Further explanation will be provided at the end of this action in the Response section.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 41-44 and 46-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The combination of materials required by these claims does not appear to have support in the original specification. A further explanation will be given at the end of this action in the Response section.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler in view of Iverson.

Wheeler discloses a seal 40 (fig. 6) comprising a u-shaped body with an inner wall, outer wall, and seat. As seen in Figure 6, the outer wall has an extended length. The walls are parallel to the axis and the seat is perpendicular to the walls. The seal has an open, asymmetrical u-shaped channel 45. The outer diameter forms a static seal at the outer surface of the outer wall and seat. The inner diameter has a composite dynamic seal/wear surface of PTFE 44 and cloth (cloth forming the “composite”). And the seal includes a first radially extending lip 42 on the inner diameter of the inner wall and a second radially extending lip on the outer diameter of the outer wall. Wheeler discloses an expander 28 in the channel. However, Wheeler does not disclose a plurality of ribs within the channel. Iverson teaches a seal with groove, seat, and legs. Iverson teaches using plural ribs within the channel instead of an elastic expander to accommodate a large range of uniform expansion and compression. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the seal of Wheeler with the ribs taught by Iverson to accommodate a large range of uniform expansion and compression.

6. Claims 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler in view of Iverson in view of Schofield (5,163,692).

Wheeler discloses a seal 40 (fig. 6) comprising a u-shaped body with an inner wall, outer wall, and seat. As seen in Figure 6, the outer wall has an extended length. The walls are parallel to the axis and the seat is perpendicular to the walls. The seal has an open, asymmetrical u-shaped channel 45. The outer diameter forms a static seal at the outer surface of the outer wall

and seat. And the seal includes a first radially extending lip 42 on the inner diameter of the inner wall and a second radially extending lip on the outer diameter of the outer wall. Wheeler discloses an expander 28 in the channel. However, Wheeler does not disclose a plurality of ribs within the channel. Iverson teaches a seal with groove, seat, and legs. Iverson teaches using plural ribs within the channel instead of an elastic expander to accommodate a large range of uniform expansion and compression. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the seal of Wheeler with the ribs taught by Iverson to accommodate a large range of uniform expansion and compression.

Wheeler discloses the inner leg comprises a film of PTFE 44, but does not disclose if fillers are used. Schofield teaches a u-shaped packing ring having a composite dynamic leg. The leg comprises PTFE. Schofield teaches the PTFE can have fillers (see col. 7, lines 25-32) to provide low coefficient of friction. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use a filled PTFE as the film to provide a low coefficient of friction.

7. Claims 40, 41, 44-46 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler in view of Iverson in view of Fang (6,536,542).

Wheeler discloses a seal 40 (fig. 6) comprising a u-shaped body with an inner wall, outer wall, and seat. As seen in Figure 6, the outer wall has an extended length. The walls are parallel to the axis and the seat is perpendicular to the walls. The seal has an open, asymmetrical u-shaped channel 45. The outer diameter forms a static seal at the outer surface of the outer wall and seat. The inner diameter has a dynamic seal/wear surface of PTFE 44. And the seal includes a first radially extending lip 42 on the inner diameter of the inner wall and a second radially

extending lip on the outer diameter of the outer wall. Wheeler discloses an expander 28 in the channel. However, Wheeler does not disclose a plurality of ribs within the channel. Iverson teaches a seal with groove, seat, and legs. Iverson teaches using plural ribs within the channel instead of an elastic expander to accommodate a large range of uniform expansion and compression. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the seal of Wheeler with the ribs taught by Iverson to accommodate a large range of uniform expansion and compression.

Wheeler discloses that the inner leg comprises a self-lubricating material (e.g. 44). However, Wheeler does not appear to disclose the composite material required by the claims. Fang teaches a seal having a surface with a dynamic seal in the form of a composite material. Fang teaches many equivalent materials suitable for use in the composite to achieve enhanced wear properties and friction resistance. Fang teaches the composite can comprise a non-elatomeric material (such as PTFE, see patent 5,842,700 incorporated by ref.) and elastomeric materials such as HNBR (col. 11, line 7). The composite can also comprise lubricant additives (such as aramid fibers, graphite or the like). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the composite material taught by Fang to provide friction resistance, enhanced wear properties, and self-lubrication.

8. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler in view of Iverson in view of Fang as applied to claim 45 above, and further in view of Schofield.

It is unclear if Fang discloses carbon or bronze as possible fillers. However, Fang does disclose graphite “and the like” as possible lubricant additives (see col. 12, lines 40-43).

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Schofield teaches that graphite, bronze and carbon are art equivalent lubricant additives.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use carbon or bronze as suitable fillers.

Response to Arguments

9. Applicant's arguments filed 8-15-07 have been fully considered but they are not persuasive.

As stated above, there is not support for the combination of certain materials required by the claims. The examiner acknowledges that the original specification provides support for a plastic or elastomer filled composite material. The specification give examples of such composites as being PTFE, bronze filled PTFE, carbon filled PTFE, or aramid fiber filled HNBR. Each is an example of the final composite. Each is NOT an example of the filler used to make the composite with either an additional elastomer or plastic. In other words the spec supports, for example, bronze filled PTFE as being the plastic filled composite (or, aramid fiber filled HNBR as being the filled elastomer). The specification does NOT support a plastic filled with bronze filled PTFE. The specification does not support a rubber filled with PTFE. Nor does the specification support the combination of materials required by any of claims 41-44 and 46-48.

Wheeler discloses at least a plastic filled composite in that the cotton weave is filled with PTFE, thus forming the composite. Figure 6 is not limited to only a film 44. Column 2, lines 1-11 disclose alternate options for the wear material. Also, it is known to use lubricant additives/fillers in PTFE to reduce the coefficient of friction (as taught by Schofield). Wheeler also clearly discloses a lip 42 at an upper end of the inner wall portion in as much as Applicant's

does. While the exaggerated drawings of Wheeler (fig. 6) might show it spaced a bit from the very top of the inner leg, Applicant's lip 24 is also spaced in a similar manner.

Fang has been applied for its teaching of improved composite materials used in dynamic seals to provide friction resistance, self-lubrication, and wear resistance. Patent 5,842,700 is incorporated by reference and discloses that PTFE is a suitable additive in such composites.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 571-272-7062. The examiner can normally be reached on M-F (10-7:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alison K. Pickard
Primary Examiner
Art Unit 3673

AP